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## Chest Infections

**TOPIC:** Chest Infections

**TYPE:** Medical Student/Resident Case Reports

### MYOCARDITIS LINKED TO PFIZER-BIONTECH COVID-19 VACCINE

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**INTRODUCTION:** The SARS-CoV-2 causing COVID-19 can have serious effects on the heart with recent data suggesting acute cardiac injury in almost one fifth of COVID-19 patients. Considering the recent role out of Covid-19 vaccine's to the general public there is a growing concern of COVID-19 related myocarditis being linked to the vaccine. Here we present a case of a young patient who presented with symptoms of COVID-19 after his second shot of COVID-19 vaccine, with subsequent development of myocarditis.

**CASE PRESENTATION:** This patient is a 21 year old male with past medical history significant of mitral valve prolapse, and resting tachycardia, presented with a 2 day history of fevers, nausea, accompanied by shortness of breath, and chest pain. Patient had his 2nd shot of Pfizer-BioNTech Covid-19 vaccine 3 days prior to admission, symptom onset was after the administration of vaccine. Vitals on admission were within normal limits, EKG did not show any acute ischemic changes, no evidence pericarditis and or pulmonary embolism related changes. Troponins were trended, 460, 637, 832, significant for acute myocardial injury but with no evidence of MI based on character of chest pain and EKG changes. 2D echocardiogram showed Left Ventricular (LV) Ejection Fraction of 43%, with mildly reduced LV systolic function. CTA chest with IV contrast showed no aortic dissection, or pulmonary embolism. Cardiac MRI showed findings suggestive of acute myocarditis. Patient was treated symptomatically, troponins trended down, with resolution of chest pain.

**DISCUSSION:** Myocarditis associated with the Pfizer-BioNTech Covid-19 vaccine, is a potential rare side effect. Even though a casual link has not been established. Considering the sequence of events for this patient, there is potentially a link between the two. Recently there have been 62 cases in Israel diagnosed after receiving the second dose of the Pfizer-BioNTech Covid-19 vaccine, incidentally most of these cases were in individuals under the age of 30, coinciding with our case. Investigations will be needed to determine what is making the younger population more prone to myocarditis after receiving the covid 19 vaccine.

**CONCLUSIONS:** Myocarditis has been associated with COVID-19 infection. But the link with Pfizer-BioNTech Covid-19 vaccine is less established, with few cases providing a causal link. Recent studies have started to link the two, but further investigations are necessary to better understand the causal link, and what propagates the younger population to develop myocarditis after receiving the COVID-19 Vaccine.

**REFERENCE #1:** <https://www.forbes.com/sites/brucelee/2021/04/27/are-rare-cases-of-myocarditis-linked-to-pfizer-moderna-covid-19-vaccines/?sh=2b1641057442>

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